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ABSTRACT

Text, illustrations, and exercises are utilized in a set of five learning modules designed to instruct nursing students in a variety of clinical skills. The first module, "Down the Tube: Insertion of a Nasogastric Tube" by Clarice Bates, describes materials and procedures used to insert a nasogastric tube through the nose and esophagus and into the patient's stomach. The second module, "How to Set Up the Holter Pump" by Frances Pauline Fischer, details procedures used in setting up a Holter pump for use in maintaining constant infusion rates of intraveneous fluids. The third module, "Assembling and Placing Equipment in Preparation for Catheter Irrigation" by Arleen O. Berg, describes urinary catheters and the equipment needed to perform a catheter irrigation. The fourth module, "Open Glove Technique" by Virginia Belt and Betty Bjornsen, illustrates a technique for donning sterile gloves without contamination. The fifth module, "Cast Check on New Post-Operative Patient with Fractured Extremity" by Kay Sellery Tompkins, describes procedures for checking the health of a fractured limb immediately after the cast has been set. Each module describes and illustrates procedures, provides reinforcement exercises with immediate feedback, and concludes with a post-test and answer key. The time specified for the completion of each module ranges from 20 to 30 minutes. (JP)

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HEALTH INSTRUCTION PACKAGES:

SPECIFIC NURSING SKILLS

MODULES PREPARED BY:

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DOWN THE TUBE: INSERTION OF A NASOGASTRIC TUBE

by

CLARICE BATES

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TITLE OF PACKAGE:	Down the Tube: Insertion of a Nasogastric Tube
AUTHOR:	Clarice Bates
INSTITUTION:	Lane Community College, Eugene, Oregon
INTENDED STUDENTS:	Nursing
ESTIMATED WORKING TIME:	25 minutes
MATERIALS NEEDED:	Dummy or model with nose, esophagus and stomach; stethoscope; large safety pin; 1/2 inch bandage tape; glass of water; straw; nasogastric tube; 30-50 syringe; emesis basin; water soluble lubricant; towel.
REVISED:	May 23, 1977

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INTRODUCTION

There are several situations in which you might insert a nasogastric tube. The tube can be used to remove stomach contents as in the case of poisoning, uncontrollable vomiting, or for obtaining a specimen. The tube can also be used to put liquids <u>into</u> the stomach as in tube feedings or instillation of medication. Probably the most common situation is one in which the goal is to remove gastric secretions, so the patient's stomach can "rest" as after stomach surgery or when the patient has recurrent nausea.

Insertion of a nasogastric tube is a relatively easy clean procedure, once you learn the basic steps. For the patient it is a miserable experience at best. While doing this package, you will practice on a model. Later, when you feel proficient, you will be ready to insert a nasogastric tube into a real patient.

OBJECTIVES OF UNIT

Overall Objective

The student will insert a nasogastric tube through the nose and esophagus (food pipe) and into the stomach of a person or a model.

Sub-Objectives

1. List the 11 pieces of equipment/supplies needed.
2. Prepare the patient for the procedure.
3. Prepare the tubing for insertion.
4. State two possible complications and appropriate nursing actions for each.
5. Insert tube via nose into the stomach.
6. Test to be sure tubing is in stomach.
7. Secure tubing.
8. Clamp tubing.

Attitudinal Objectives

Students will be able to report feelings about package and their responses to preparation and procedures.

PRACTICE EXERCISE #1

Gathering Materials

Before you are ready to insert the tube, you will need to gather the materials needed. Normally, you will get these items from various places in the hospital or clinic. Today we have them all collected in the large tray. Necessary equipment includes:

1. Nasogastric tube (usually Levin brand, size 12-18) Plastic tubes are less irritating than rubber. Most places use disposable plastic tubes.
2. Water-soluble lubricant
3. Clamp for tubing
4. Towel
5. Emesis basin
6. Glass of water
7. Straw
8. Stethoscope
9. 30-50 cc syringe (bulb or piston type)
10. 1/2-inch adhesive tape (take one roll, tear four six-inch pieces)
11. Safety pin--large

Practice Question #1

List below from memory the 11 pieces of equipment you would need to collect in preparation for insertion of a nasogastric tube. If this seems like a drag, you can continue with the package and come back to this. It is important to know because in the hospital you'll have to be able to gather all this stuff.

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)

Feedback

If you answered the following, you are absolutely correct:

nasogastric tube, water-soluble lubricant, towel, emesis basin, glass of water, straw, stethoscope, 30-50 cc syringe, tape, safety pin, clamp for tubing.

GREAT START!

PRACTICE EXERCISE #2

Preparing Patient

Insertion of a nasogastric tube is a distasteful experience for a patient. It is helpful to explain the procedure to the patient ahead of time, stressing that, although it is unpleasant, it is not painful and that it will not take more than a few minutes. Most patients want to cooperate, but are unable to do so unless you explain to them what will happen and what they are to do.

Since the patient will be unable to talk while you are inserting the tube, it is important that you agree ahead of time on a signal for him to use in case he wants to "wait a second" if he starts to gag. A raised hand or finger is a good signal.

Physical preparation of the patient is minimal: Raise the head of the bed so that the patient is sitting upright in high Fowlers position, neck hyperextended. Put a towel across the patient's chest and keep the emesis basin near by. (This is done because patients are often nauseated by the procedure and occasionally vomit. Also, fluid from the stomach occasionally flows from the end of the tubing as soon as it is inserted. These precautions can often save a mess.)

That's it. Really just four steps to prepare the patient:

1. Explain the procedure
2. Decide on a signal in case the patient wants to "wait a sec"
3. Set the patient upright in high Fowlers position, neck hyperextended.
4. Put a towel across his chest (use tape on the dummy) and keep the emesis basin handy.

Practice Question #2

At this point, get a fellow student to play the role of the patient. Or, you may skip this part for now, but remember to explain on a real patient.

Now, prepare the dummy and patient for nasogastric tube insertion, using and listing the four steps outlined above.

Feedback

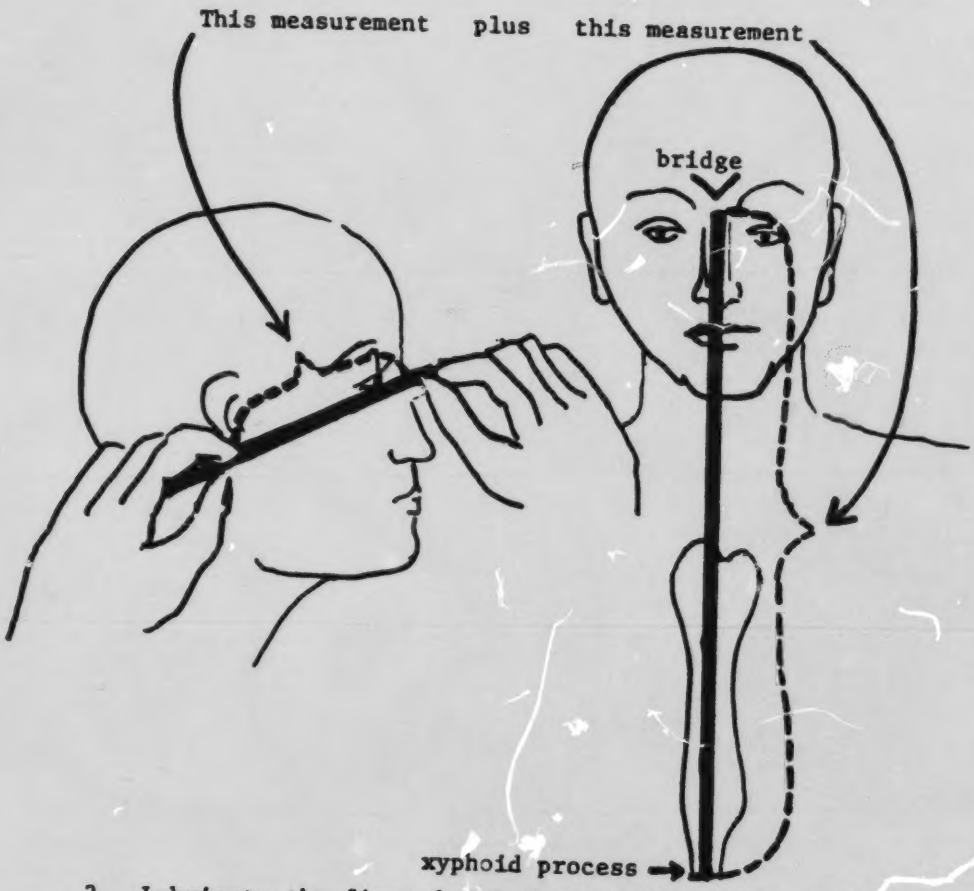
If you remembered to explain the procedure, choose a distress signal, set the patient upright and put a towel across his chest and the emesis basin nearby, you have the patient prepared! Next you will prepare the tube.

PRACTICE EXERCISE #3

Preparing the Tube

1. Nasogastric tubes come in two basic types: rubber and plastic. The rubber ones are reusable and tend to be very soft. To make a rubber tube easier to manipulate, put it in chilled ice water. The plastic tubes are disposable. They tend to be stiff. If this is a problem, just warm it under warm water from the sink for a few seconds and it will soften. Because most places use the plastic tubes, this is the kind we have for you to use.

2. Next you need to measure the tube, starting with the end with the holes. Measure from the bridge (top) of the nose to the ear lobe and add to that the distance from the bridge of the nose to the xyphoid process. This is illustrated at the top of the next page. Mark this spot on the tube with a piece of tape.



3. Lubricate the first 6-8 inches of the tubing (by the holes) with the lubricant. This will help the tubing slip through the nose much more comfortably.

Practice Question #3

Prepare the tubing for insertion, following (and listing) the three-step procedure.

Feedback

Did you remember to (1) chill rubber tube in ice water or soften the plastic tubing in warm water; (2) measure and mark the tubing as outlined above; and (3) lubricate the tubing 6-8 inches from the tip (the end with the holes)? If so, congratulations, you are nearly ready to insert the tube.

PRACTICE EXERCISE #4

Problems in Inserting the Tube

As we said before, this is a relatively easy procedure. However, there are a couple of problems that can occur. The first one has to do with inserting the tube through the nose. Occasionally the passageway is obstructed, possibly from previously healed fractures or congenital abnormalities. If you find it hard to insert the tube on one side, try rotating the tube gently. DO NOT USE FORCE. If you still can't get it through, try the other nostril.

The second problem is more serious. Since the esophagus and the trachea are next to each other, it is possible to put the tube down the trachea. This generally causes gasping, coughing, or cyanosis. If this happens, pull back on the tube until gasping stops. Do this immediately so the patient can breath again.

Practice Question #4

From memory write the two common problems encountered when inserting a nasogastric tube and tell what to do if you encounter them.

Feedback

The problems are:

1. Difficulty in inserting the tube through the nose. For this problem you would try gently rotating the tube. If that doesn't work, try the other nostril.

2. Accidental placement of the tube in the trachea, causing respiratory problems. Solution is to pull back on tube immediately.

Did you get them? Good! Now you are ready to insert the tube!

PRACTICE EXERCISE #5

Inserting the Tubing

Now you are ready to actually insert the tube. Give the patient the glass of water to hold. 1) Begin gently inserting the tube. 2) When the tube reaches the pharynx, the patient may gag and want to rest for a moment. 3) Next, have the patient drink water from the straw as you pass the tube. Swallowing the water makes passing the tube easier and makes it more likely that you will get the tube into the esophagus. 4) When you reach your tape marker, you will probably be in the stomach.

Practice Question #5

Insert the tube through the nose into the stomach.

Feedback

If you have inserted the tube from the nose to the marked area on the tube, and your patient is not choking, you have probably reached your goal. You'll learn in the next exercise how to be certain.

PRACTICE EXERCISE #6

Testing for Correct Placement

There are three ways you can test to see if the end of the tubing is in the stomach. (Sometimes stomach contents flow out of the tube as soon as it is inserted. In that case it really isn't necessary to check further.)

Figure B

Below are three ways to test. Any one will do.

1. Aspirate stomach contents with the syringe.

2. Place the end of the tube in water. If tube has accidentally been placed in the lung, air bubbles will appear in the glass on expiration. Remove immediately if this occurs.

3. Place stethoscope over epigastrium and listen as you inject 5 cc of air into the tubing. A bubbly sound can be heard as the air enters the stomach.

Practice Question #6

Do the three tests to see if the tube is actually in the stomach. List them as you complete them.

Feedback

The three ways are (1) aspirate stomach contents with syringe; 2) put end of tube in water; 3) inject 5 cc air in tubing. Listen with stethoscope placed over epigastrium. Your tube is in place. The job is nearly completed.

PRACTICE EXERCISE #7

Securing Tubing

Now that your tubing is in place, you'll want to be sure that it stays there. There are two ways to do this and you'll need to do both. First tape the tubing in a way that will not obstruct vision or pull on the patient's nose. (Figure C)

Secondly, you'll want to attach the tubing to the patient's gown so that he can move around the bed comfortably. (Figure D)

Figure C

Figure D

Practice Question #7

Secure the tubing in two ways and list them.

Feedback

The tubing should be taped to the patient in a way that does not obstruct the patient's vision or pull on his nose. The tube should also be attached to the patient's gown.

PRACTICE EXERCISE #8

Clamping the Tubing

You now have a tube with one end in the stomach and one open end outside. To keep stomach contents from spilling all over, you will need to clamp the end of the tube until you are ready to connect to a suction machine, take a specimen or instill feeding—or whatever the purpose for the insertion of the tube. Attach clamp and screw in tightly. You have now completed the procedure. You will learn in another packet how to connect to suction equipment and remove specimen.

Practice Question #8

Clamp the tubing.

Feedback

Once you have clamped the tubing, you have completed the insertion of the tube. CONGRATULATIONS!

POST-TEST

1. List 11 pieces of equipment or supplies necessary for insertion of a nasogastric tube.

2, List the four steps to take to prepare a patient mentally and physically for the insertion.

3. Prepare the tubing for insertion. List the three steps to take.

4. List the two common problems encountered when inserting the tube and tell what you should do if they occur.

   1)

   2)

5. Insert tube via nose into stomach and list the four steps taken.

6. Test to be certain nasogastric tube is in place. List the three different methods.

7. Secure tubing and list two ways this should be done.

8. Clamp the tubing.

Post-Test Answers

1. List 11 pieces of equipment or supplies necessary for insertion . . .
   - stethoscope
   - nasogastric tube
   - water soluble lubricant
   - clamp
   - towel
   - emesis basin
   - glass of water
   - straw
   - 30-50 cc syringe
   - safety pin
   - 1/2-inch tape

2. Prepare a patient for insertion
   1) Explanation to patient
   2) Agree on signal patient might use to indicate "wait a minute" in case of choking or gagging
   3) Positioning in high Fowlers, neck hyperextended.
   4) Towel across chest, emesis basin handy.

3. Prepare tubing for insertion
   1) If tubing is rubber, chill to make it more firm.
      If tubing is plastic, warm in warm water to make it softer.
   2) Measure tubing as shown on pages 6 - 7 (from bridge of nose to ear lobe, plus the distance from bridge of nose to bottom of the xyphoid process.) Mark this distance with indelible marking pen or tape.
   3) Lubricate first 6 - 8 inches of tube.

4. Two common problems when inserting tube . . . and what to do
   1) Nasal obstruction: Gently rotate tube. If unsuccessful, use other nostril.
   2) Accidental placement of tube in trachea, evidenced by coughing, gasping, cyanosis. Remove immediately.

5. Insert tube . . .
   1) While lifting head, gently insert tube into nostril, passing tube downward and backward.
   2) When tube reaches nasopharynx, the patient may gag. Allow to rest a few seconds.
   3) Allow patient to sit normally. Have patient begin to drink water via straw and advance tube as patient swallows.
   4) Advance tube to marked area on the tube.

6. Test: Sure tube's in place?. . .
   1) Aspirate stomach contents with syringe
   2) Place end of tube in water. If tube has inadvertently been placed in the lung, air bubbles will appear in the glass on expiration.
   3) Place stethoscope over epigastrium. Inject 5 cc air into tubing. Bubbly sound can be heard through stethoscope if air is entering stomach -- as it will in a properly placed tube.

7. Secure tubing in two ways.
   1) Tape tubing to patient's face in such a way as to avoid obstructing vision and avoid trauma to nose.
   2) Anchor tubing to patient's gown with a safety pin.

8. Clamp tube until time to be connected to whatever equipment has been ordered.

Response Sheet for the Author

Rate your feeling on the line below.

Was this package:	Very clear	_____	_____ Very confusing
	Clear	_____	_____ Confusing
	Useful	_____	_____ Useless
	Enjoyable	_____	_____ Boring

While performing the procedure, I felt

Confident	_____	_____ Insecure
Prepared	_____	_____ Unprepared

Do you think that you would tremble if you were doing this procedure on a real person?

Would you be willing to demonstrate this procedure on a real person? If so, please inform instructor who will help you select a real patient.

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HOW TO SET UP THE HOLTER PUMP

by

Frances Pauline Fischer

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TITLE OF PACKAGE:	How To Set Up The Holter Pump
AUTHOR:	Frances Pauline Fischer
INSTITUTION:	Midland (Mich.) Hospital Center, Inservice Education
INTENDED STUDENTS:	Practicing R.N.s
ESTIMATED WORKING TIME:	30 minutes
MATERIALS NEEDED:	I.V. pole I.V. solution I.V. administration set (shorter the better) Holter pump Holter pump holders Extracorporeal tubing for pump chamber, sizes A, B, C, D (D tubing pack should be open)
FIELD TEST COPY	

NOTE: Student must be familiar with the administration of intravenous fluids to use this package effectively.

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INTRODUCTION

After finishing this self-instructional package, you will be able to set up the Holter pump. You will know how to start the pump and adjust the flow rate of I.V. fluid.

Knowing how to operate the pump will make it easier for you to administer a constant amount of fluid to your patient over a given time period, thus making the administration of I.V. fluid safer for your patient.

OBJECTIVES OF UNIT

Overall Objective

At the end of this unit, you will be able to initiate the use of the Holter Pump by setting up the pump in a practice session.

Sub-Objectives

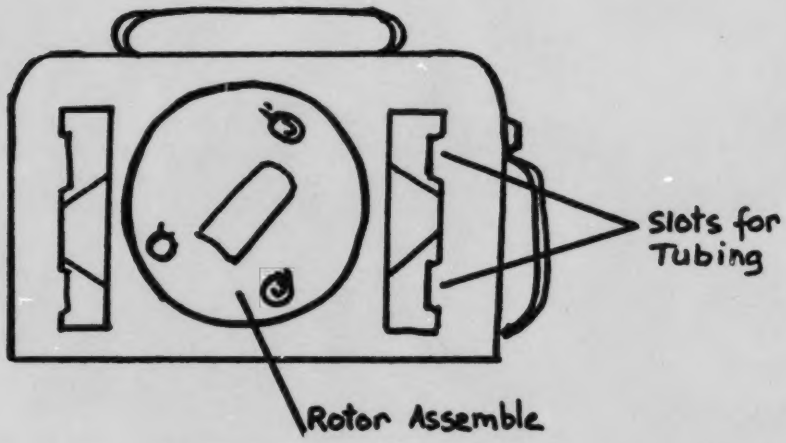
You will be able to:

- describe the use of the Holter Pump
- identify the type and size of tubing needed for a given flow rate
- identify the Holter Pump
- know where to get the equipment needed to set up the Holter Pump
- hook the tubing used together in correct order
- clear tubing line of all air
- place Holter Pump on IV pole
- put Holter chamber tubing around the rotor assembly
- start pump action
- set rate of pump
- adjust rate if needed
- determine if fluid is being pumped through system

PRACTICE EXERCISE #1

Welcome to the world of the Holter Pump!

This is what the Holter Pump looks like:

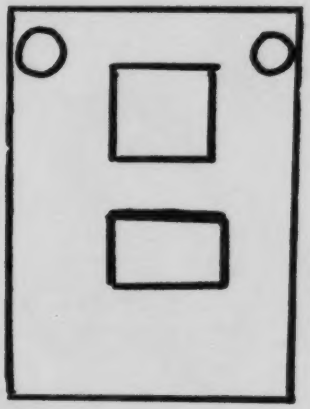


1. Find it in your package of materials.
2. Locate the labeled parts on the pump.

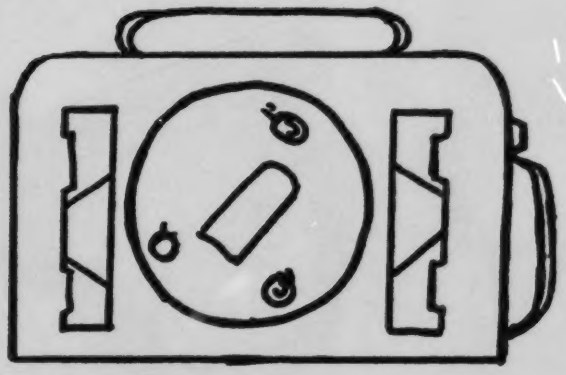
PRACTICE QUESTION #1

Which one of these is the Holter Pump? (Mark the box.)

1)



2)



FEEDBACK

If you chose number 2, you have correctly identified the Holter Pump.

If you did not then try again.

PROCEED

PRACTICE EXERCISE #2

The Holter Pump is a mechanical device to aid in the constant administration of intravenous fluid to a given patient.

Not all patients require the use of this pump. Examples of those needing it are:

Patients on:

1. Hyperalimentation regime
2. Constant heparin drip
3. Constant Zylocaine drip
4. Small children and infants
5. Where an accidental overload of fluid is extremely dangerous to the patient's health.
6. Or when ordered specifically by the physician

PRACTICE QUESTION #2

Why is the Holter pump used, according to the above information?

Turn page for answer

FEEDBACK

If you said something like this: to aid the control of and to maintain a constant infusion rate of IV fluid to a given patient you answered sufficiently.

Go on to next page
if you understand
the use of the pump

PRACTICE EXERCISE #3

Since the pump is used to control IV fluid, you need an IV bottle and tubing set up. Find these in your package and set up on IV pole. A secondary piggyback unit is best to use.

You will need a special tubing for the operation of the pump. Find this tubing in your package. It is individually packaged and is called Pump Chamber or IV Pump Set.

The rate of IV administration determines the size of tubing you will use. Sizes available are A, B, C, and D. Identify the different sizes by looking at the white tab on the tubing. Do not open these packages of tubing!

PRACTICE QUESTION #3

I would like you to answer:

What sizes of tubing are opened and in front of you.

PRACTICE EXERCISE #4

On the bottom of the Holter Pump is a chart for determining the size of tubing needed for the rate of administration ordered.

PRACTICE QUESTION #4

For a rate of 125cc per hour, what size tubing will you use?

FEEDBACK

If you said B and D, you have identified the tubing correctly.

If you did not answer it correctly, try identifying this tubing again.

You must know it before proceeding.

PRACTICE EXERCISE #5

You will now attach the chamber tubing to the regular IV set hanging from the IV pole.

For purposes of this learning session, use the tubing already opened (Size D).

Pick up the tubing.

PRACTICE QUESTION #5

Identify the rectangular fittings and the soft-stretchy part of the tubing.

Attach the short end of the chamber tubing to secondary IV set.

FEEDBACK

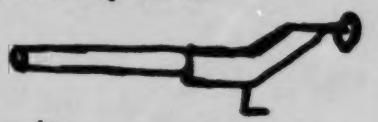
If you hooked this up correctly, the medication injection site on the pump chamber tubing will be unattached.

The IV set and pump chamber tubing must be primed or cleared of all air. This may be done before putting pump tubing on the rotor assembly or after putting it on the assembly.

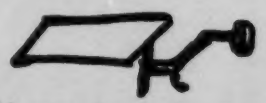
Prime the tubing as for any other I.V.

NOTE: Check tubing to be sure all air is removed before attaching it to a patient.

You must now attach the Holter pump to the I.V. pole. Find in your packet of materials a flat piece of metal with a clamp on it.



O.K., now find a metal bar with a clamp on it.

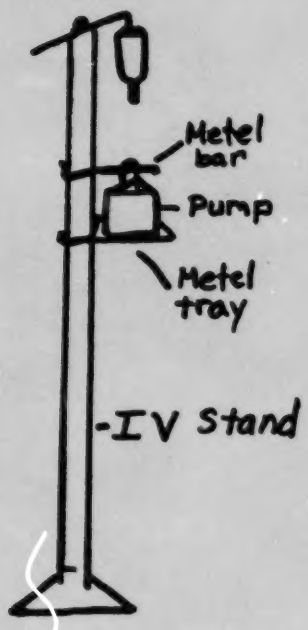


Attach the flat piece to the I.V. pole about 1/4 way down the I.V. pole. Clamp securely. Use a little weight from hand pressure to test if it is securely clamped.

Set the Holter Pump on the metal tray.

Clamp the metal bar on the IV pole close to the top of the pump. It should rest on top of the pump between handle.

This is what it should look like:

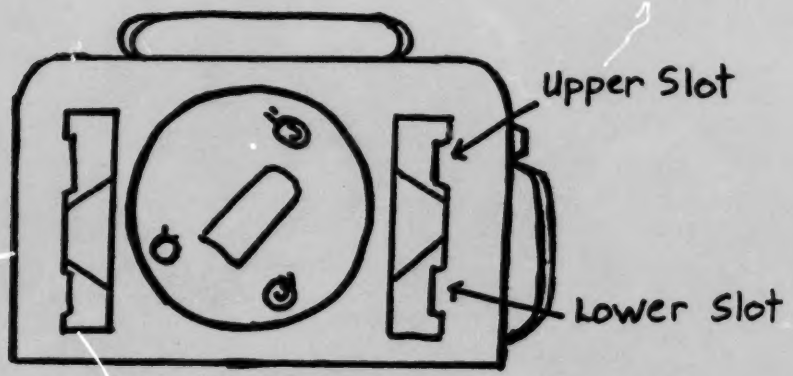


You are now ready to put the pump chamber tubing around the rotor assemble.

Grasp the pump chamber tubing just above the rectangular fitting nearest the IV solution, with the right hand.

Grasp the other rectangular fitting with the left hand.

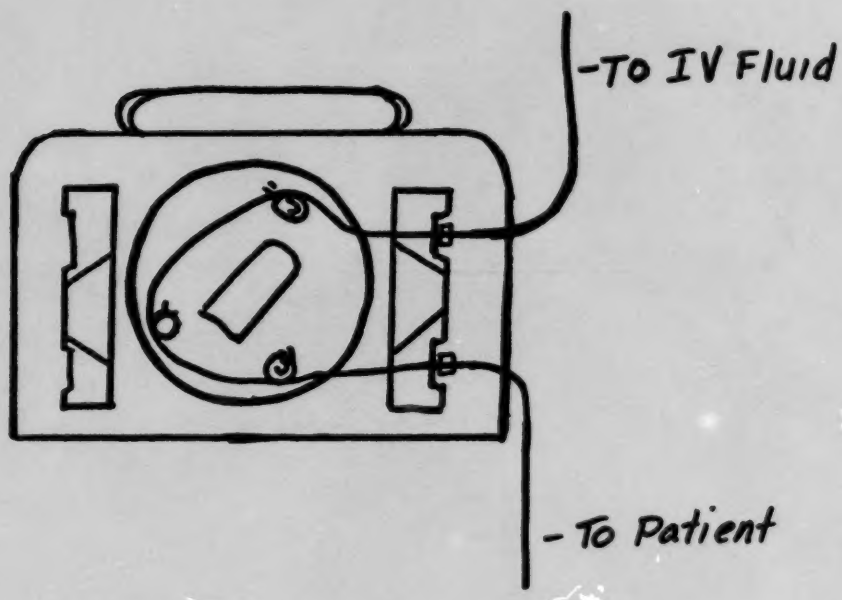
Holding your hands horizontally, place the rectangular fitting into the upper slot of the pump.



Rectangle should be flat against slot.

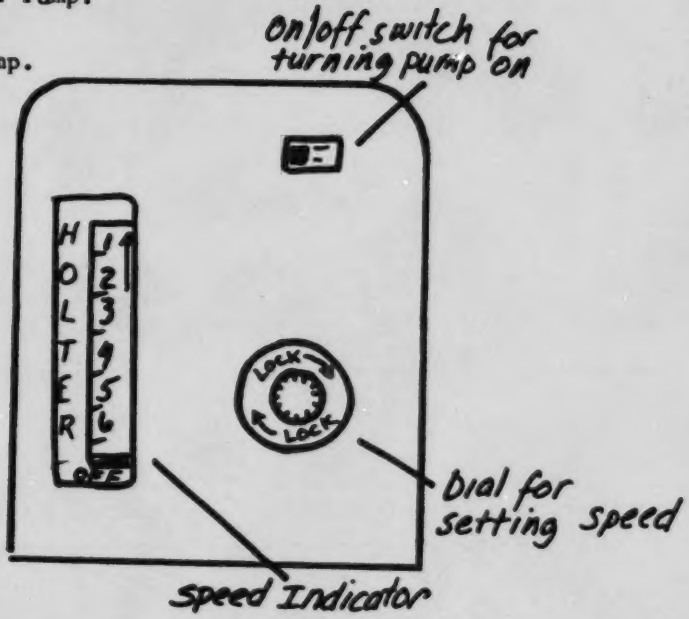
Stretch the tubing around the rotor wheel and secure the other rectangular fitting in the lower slot on the same side of the pump.

If your pump chamber tubing looks like this, you have set it up correctly:



Look at the front of the Holter Pump.

Identify these parts of the pump.



1. Open clamps of IV tubing
2. Turn on pump #1
3. Look at dial for setting speed #2

   Inner knob is for adjusting speed of pump
4. Unlock outer ring by turning it counterclockwise
5. Turn inner ring to set the speed of the pump

If you will look at the rotary assembly, it should be turning.

As the speed indicator, #3, moves to a lower number, the faster the fluid will flow and the rotary wheel will turn.

Adjust to these speeds on the pump:

a. 2

b. 4

As you did this, the drops in the drip chamber should have changed. Repeat again allowing time to see the change occur.

The exact administration rate for the I.V. fluid must be determined by counting the I.V. drops per minute, and then adjusting the pump speed accordingly to set it at the administration rate ordered by the physician.

Once the rate has been set, lock the speed indicator knob in place. This assures that the speed will not be changed accidentally.

PRACTICE EXERCISE #6

ACTION

From information given above, set the I.V. flow rate at 12 gtts/min.

FEEDBACK

If you set it correctly, you should count 12 gtts in a 60 sec. time span or 3 drops in a 15 sec. time span.

To determine if fluid is actually being pumped, check the drip chamber and see if drops of IV fluid are falling into it. As long as the pump is turned on, the wheel is turning and the lines are not plugged, fluid will be pumped. If the tubing becomes blocked, the rotor assembly will still turn, however, the fluid will not be pumped.

PRACTICE EXERCISE #7

What do you notice in the drip chamber when fluid is being pumped?

FEEDBACK

If your response is drops from the IV bottle, you are correct.

After you have finished this unit of instruction, replace all equipment as you found it. Dismantle your creation-in other words. And, take the Post Test to insure your understanding of the Holter Pump set up.

For your Post Test, you will need a student for a monitor.

CHECK LIST TO BE USED BY MONITOR

	Yes	No	Needed Assistance
1. Student obtained following equipment IV Pole IV Bottle IV Tubing Holter Pump Chamber Tubing			
2. Student attached pump to IV Pole securely			
3. Student connected tubing together in correct manner.			
4. Student cleared tubing of air			
5. Student put tubing through pump correctly			
6. Student started pump			
7. Student adjusted pump to IV flow rate specified by monitor.			

POST-TEST

1. Why is the Holter pump used?

2. Draw a picture of the major components of the Holter pump setup and label them.

3. How can you determine the size of Holter pump tubing needed for a given rate of fluid?

4. Where do you obtain the following pieces of equipment?

   a. Holter pump

   b. Chamber tubing

5. Demonstrate the setting up of the Holter pump to your monitor.

   a. Give check sheet to your monitor before you begin.

   b. Adjust pump to fluid administration rate specified by your monitor.

6. How do you determine if fluid is being pumped?

7. This self-instructional package was:

Clear	Confusing
Useful	Useless
Well-summarized	Too detailed

POST-TEST ANSWER KEY

1. To aid in the control of and to maintain a constant infusion rate of IV fluid to a given patient.

2.

3. On the bottom of the pump is a chart which gives approximate infusion rates and the size of tubing you should obtain.

4. a. Surgical floor and ICU

   b. Central Services

5. Check List should obtain all Yes answers to be correctly done.

6. Drops in the IV bottle in the drip chamber.

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ASSEMBLING AND PLACING EQUIPMENT IN PREPARATION FOR CATHETER IRRIGATION

BY

Arleen O. Berg

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TITLE OF PACKAGE:	Equipment Placing and Assembling in Preparation for Catheter Irrigation
AUTHOR:	Arleen O. Berg
INSTITUTION:	Maricopa (Ariz.) Skill Center
INTENDED STUDENTS:	Basing Nursing Assistants
ESTIMATED WORKING TIME:	20 Minutes
MATERIALS NEEDED:	Foley Catheter; Irrigation tray (Cutter-Resiflex); overbed table.

FIELD TEST COPY

NOTE: Effective use of this unit requires that materials listed above be available to student.

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INTRODUCTION

This is a unit for you, as a nursing assistant, to learn to properly assemble and place equipment for use in a catheter irrigation. This is a very important procedure because in order to keep the area and surroundings clean and sterile, the first step must be done properly before continuing with the next procedure. When you have satisfactorily completed this unit, you will be ready to proceed.

OBJECTIVES OF UNIT

Overall Objective

As a nursing assistant, upon completion of this packet you will be able to satisfactorily assemble and place equipment properly in preparation for catheter irrigation.

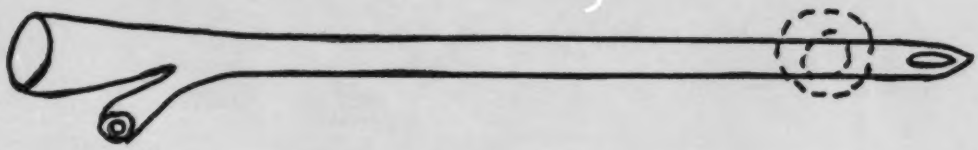
You will:

1. Describe and draw a urinary catheter.
2. State the function of the urinary catheter.
3. Assemble the equipment in preparation for the catheter irrigation.
4. Follow the directions on the irrigation tray.
5. Place all articles in irrigation try in the proper place.
6. Clean up or dispose of the equipment.
7. Record procedure on practice sheet and report to instructor.

PRACTICE EXERCISE #1

Input

The urinary catheter is a hollow tube, usually made of a soft rubber or plastic. Some catheters have a balloon surrounding the neck which is inflated to keep the catheter in place. This type is called the Foley catheter. Insertion of a catheter is a sterile procedure and is performed by nurse or physician.



Stop. Pick up and examine catheter displayed.

Practice Question #1

Since you have completed the above exercise, a catheter is:

a. a hollow tube to drain off urine

b. a bag for collection of urine

c. a container you collect specimens in

Please draw the catheter you examined in above exercise.

Feedback

If you were able to draw a catheter without looking at the picture, and you stated that a catheter is a hollow tube to drain off urine, you are correct. Always remember this pertains specifically to a urinary catheter. Ther are other catheters and other types.

PRACTICE EXERCISE #2

Input

The main function of a urinary catheter is to drain the urine from the bladder. There are many reasons for this - it can be because of infection in the bladder, or patient unable to control urine and bladder control and others. Some patients have catheters for long periods of time, others for only a short time.

Practice Question #2

From information in the above practice, the main purpose of a catheter is:

a. help the patient walk

b. drain urine from the bladder

c. keep the patient from vomiting

Feedback

The main purpose of a catheter is to drain the urine [illegible] the bladder. If you stated this, you are absolutely right and may continue to the next page.

PRACTICE EXERCISE #3

Input

The equipment needed to irrigate this urinary catheter are as follows:

a. asepto syringe

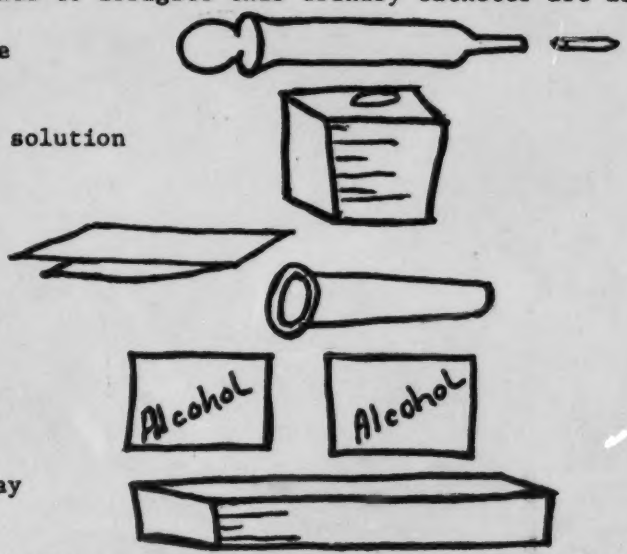
b. container for solution

c. drape cloth

d. catheter plug

e. alcohol wipes

f. irrigation tray



These articles should be assembled properly. The tray itself is obtained from the supply area wherever you work. It is completely wrapped and therefore we assume it is sterile and handle it in that manner. The irrigation tray is taken to the patient's room. The patient in bed has a catheter.

The overbed table by the patient's bed should be used to set this tray on. Now wash your hands. Open the tray.

1. Unwrap tray. Spread wrapping on overbed table as a drape.
2. Open irrigation tray - DO NOT TOUCH INSIDE.
3. Take out container for solution. DO NOT TOUCH INSIDE. Set container upright.
4. Asepto syringe is in container. Leave it in there.
5. Remove drape cloth from tray and spread it under the catheter which is attached to the patient.
6. Place catheter plug and alcohol wipes on drape.

PRACTICE EXERCISE #3 (cont.)

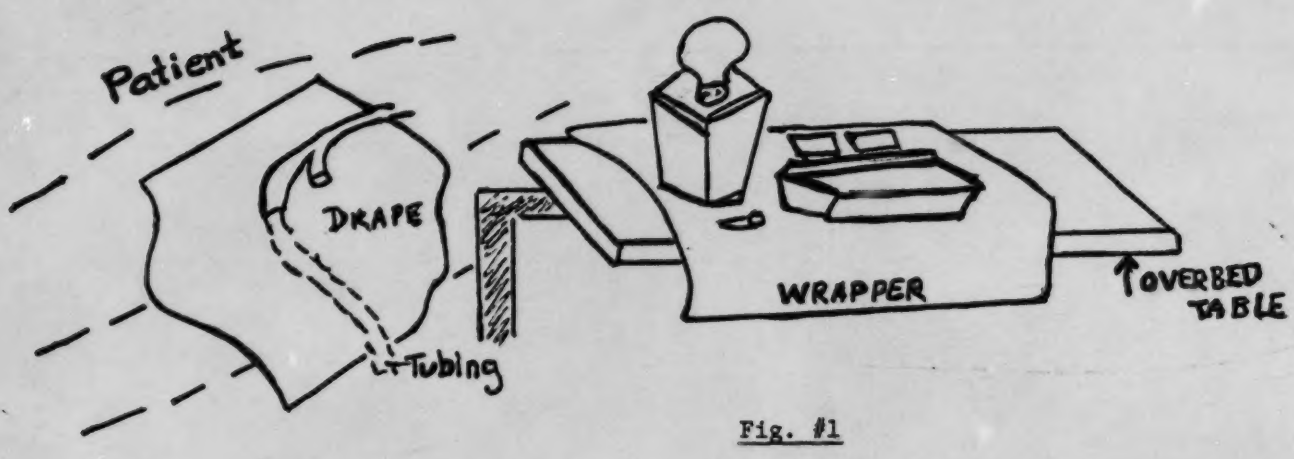


Fig. #1

PRACTICE QUESTIONS #3

Now, perform, yourself, the following procedures:

1) List the equipment needed for irrigation:

a.
b.
c.
d.
e.
f.

2) Now open the tray correctly and list the steps:

a.
b.
c.
d.
e.
f.

3) Then place all the articles in the proper place.

Feedback

When you have completed the above you should have done the following:

1. Equipment needed and assembled:

   a. Asepto Syringe
   b. Container for solution
   c. Drape cloth
   d. Catheter plug
   e. Alcohol wipes

2. Steps in opening tray:

   a. unwrap tray - spread wrapping over bedside table
   b. open irrigation tray - do not touch inside
   c. take out container for solution - do not touch inside
      set container upright
   d. Asepto syringe is in container - leave it there
   e. Remove drape cloth from tray - spread it under catheter which is attached to patient
   f. place catheter plug and alcohol wipes on drape

3. With all this assembled - place it properly without looking - when you have placed it properly refer to Fig. #1 and check yourself.

PRACTICE EXERCISE #4

You now have come to the part where the equipment is to be cleaned or disposed of properly. All utensils and equipment used in Exercise 3 are disposable - therefore, pick up all articles (not the catheter!) - wrap in outside wrapper and dispose of them in the trash can available in dirty utility room. NOTE: If you had followed through after setting up the equipment and actually done the irrigation you would not have disposed of equipment until you were completely finished. You only demonstrated the proper placement, but did open tray and contaminate equipment; therefore, we dispose of it.

Now let the instructor know you have completed and marked your skill sheet in the proper place. Have instructor initial it.

Feedback

If equipment was properly disposed of in trash can in the dirty utility room; the area used for demonstration is all clean; you have properly marked your skill sheet and the instructor has initialed it, you have satisfactorily completed this unit.

Please do not write on this page.

POST-TEST

Complete:

1. Describe and draw urinary catheter:

Circle the correct answer:

2. The main function of a catheter is:

   a. To relieve the urinary problems and discomforts of patients

   b. To keep the patient from vomiting

   c. To help him walk

3. The equipment needed for irrigating a catheter:

   a. A wash basin and face cloth

   b. An emesis basin and 2 towels

   c. An irrigation tray - containing alcohol swabs, syringe, container for solution, catheter plug and sterile drape cloth.

4. When opening an irrigation tray, you:

   a. Turn it upside down and let articles fall on table.

   b. Open it carefully - being sure not to contaminate inner contents.

   c. Open it in the utility room

5. When articles are taken from container they should be placed:

   a. Within the patient's reach.

   b. On a sterile area

   c. On the bedside stand

(Post-test - continued)

6. When finished with the equipment, it should always be:

   a. Washed and put in the utility room to use again

   b. Thrown in the trash

   c. Kept by the patient's bedside

7. The results of this procedure are recorded:

   a. On a practice sheet

   b. At the nurses' station

   c. You do not report or record it.

8. The content of this package:

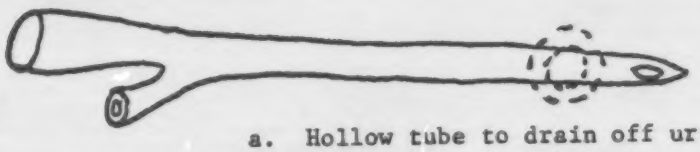
   a. Was very worthwhile and useful.

   b. Was a waste of time.

   c. Too detailed and hard to understand.

9. This packet could be improved by:

ANSWERS TO POST-TEST

(1) 

a. Hollow tube to drain off urine.

(2) a

(3) c

(4) b

(5) b

(6) b

(7) a

(8) The author hopes you circled a. and

(9) gave constructive suggestions for improving the learning unit.

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OPEN GLOVE TECHNIQUE

by

VIRGINIA BELT, R.N., B.S.N.

and

BETTY BJORNSEN, R.N., M.N.

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TITLE OF PACKAGE:	Open Glove Technique
AUTHORS:	Virginia Belt, R.N., B.S.N. and Betty Bjornsen, R.N., M.N.
INSTITUTION:	Los Angeles Valley College
INTENDED STUDENTS	Health occupation personnel
ESTIMATED WORKING TIME:	20 minutes
MATERIALS NEEDED:	Two pairs of sterile gloves; flat working surface; partner
REVISED:	June 15, 1977

NOTE: Effective use of this unit requires two students working together.

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Introduction

This unit of instruction will teach you how to correctly don sterile gloves using the open technique. The purpose of wearing gloves are: 1) to protect the patient from pathogenic organisms that may be on the health occupation workers hands, and 2) to protect the health worker from disease-producing organisms which may be acquired from the patient.

Sterile gloves are worn to prevent contamination of the patient as in the postoperative care of surgical wounds and in carrying out procedures requiring surgical asepsis, such as urinary catheterization or tracheostomy care.

To complete this unit you will need the aid of an observer.

Objective

Upon completion of this unit of instruction, you will be able to 1) open a package of sterile gloves, and 2) don the gloves using the open method, without contamination.

Sub-objectives

1) You will be able to name the type of procedure that is taught in this unit.
2) You will be able to explain the purpose of this procedure.
3) You will attain a feeling of accomplishment and confidence in your ability to safely don sterile gloves.
4) You will be able to evaluate the performance of another student.

Normally, donning sterile gloves is considered a single procedure and can be completed in three minutes or less. For instructional purposes you will complete the procedure in three stages. The first stage is opening the package, removing and opening the inside package. The second stage is donning the left glove. The final stage is donning the right glove and turning up the cuffs of both gloves.

Now answer the following questions.

1. What procedure will you master after completing this unit?

   _____

2. What is the purpose of this procedure?

If you said you will master the open glove technique in three stages, you are right! If you said the open glove technique will protect the patient and the health occupation worker from pathogenic or disease-producing organisms, you are right again!

If you did not answer both questions correctly, go back to the first page and start again.

If both answers are correct, proceed to the next page.

Both participants are to read through stage one prior to starting the procedure.

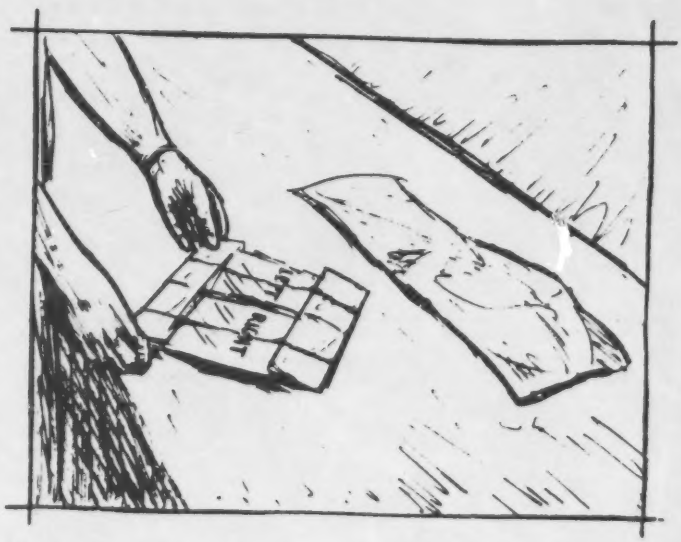
Stage One

Step A:

After you have thoroughly cleansed your hands, take the package of sterile gloves and open the package by peeling the sides from the top down.

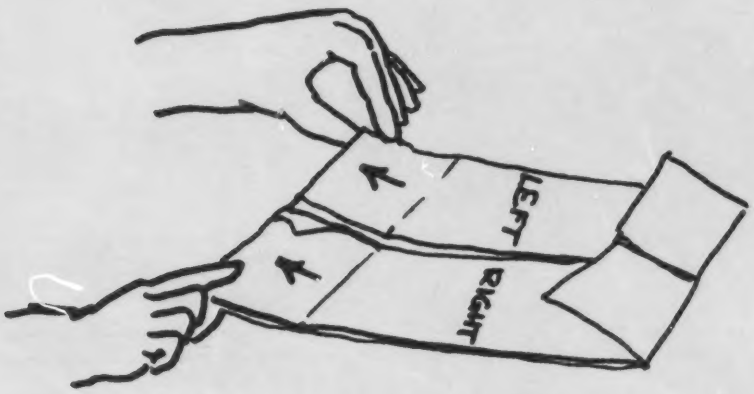
Step B:

Pull out the inside wrapper by touching the outer corners only. Open the inner wrapper by touching only the lower outer corners. Lay the wrapper flat on the table.



Step C:

Fold down the bottom flap, as shown in the illustration below, touching the wrapper by the lower outer corners only.



Step D:

Grasp edges of the inside flaps and pull away from center of wrapper. At this time, the top fold will automatically unfold upwards.

4

This completes Stage One. One person should volunteer to be the observer and the other the participant.

STOP! Go back to the beginning of Stage One and proceed with the actual practice of opening the sterile glove pack. At this time the observer will check the participant on each step using the following check list. Use the grease pencil to mark your checks on the plastic cover. At the end of the exercise, wipe off the grease marks with the soft cloth.

	YES	NO
1. Was the package peeled down from the top?		
2. Was the inner wrapper opened flat, touching only the lower outer corners?		
3. Was the bottom flap folded down touching the corners only?		
4. Was the wrapper opened from the center outward?		

If all items are checked yes, CONGRATULATIONS!

If any item is checked no, repeat the complete procedure.

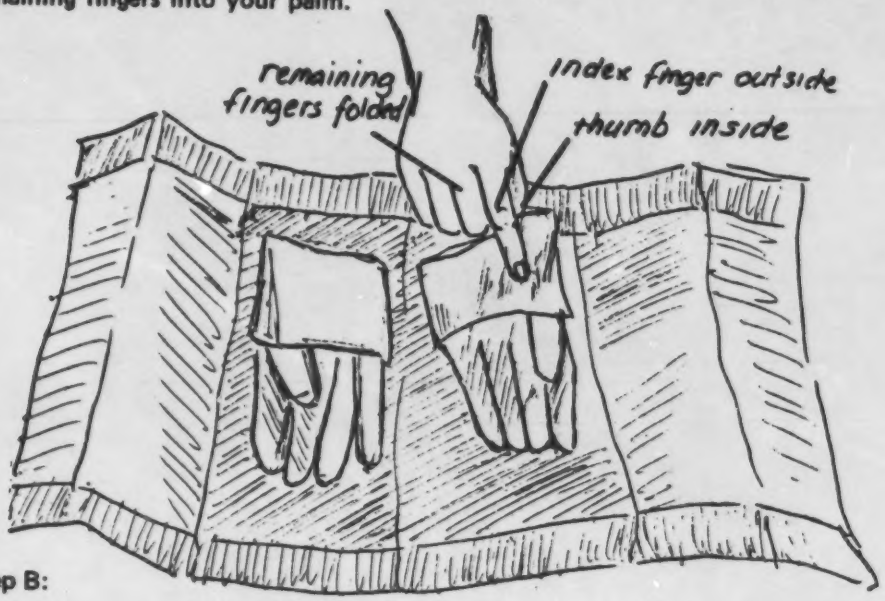
Proceed to Stage Two when you have mastered Stage One.

Stage Two

Continue the same roles as used in Stage One. Prior to starting the practice exercise, completely read the material in Stage Two.

Step A:

Grasp the left glove with your right hand by inserting your thumb on the inside of the glove and your index finger on the outside of the cuff. Note that only the very upper portion of the cuff is touched. Fold the remaining fingers into your palm.



Step B:

Pull on the folded edge of the cuff, while at the same time pushing and wiggling your fingers into the fingers of the left glove. Do not unfold the cuff at this time. Do not allow the glove to touch the table or your clothes as they are considered unsterile.

Step C:

Sometimes a little body language helps make pulling the glove into proper place a little easier. Note the facial expression with the twisted tongue. Feel free to experiment with body language. It Helps !

This completes Stage Two.

STOP! Go back to the beginning of Stage Two and proceed with the actual practice of putting on the left glove. At this time the observer will check the participant on each step using the following checklist. Use the grease pencil to mark your checks on the plastic cover. At the end of the exercise, wipe off the grease marks with the soft cloth.

	YES	NO
1. Was the glove picked up by the edge of the fold only?		
2. Were the third, fourth, and fifth fingers folded into the palm?		
3. Was the glove pulled on by touching the top of the fold only?		
4. Was the cuff left folded down?		

If all items are checked yes, CONGRATULATIONS!

If any item is checked no, repeat the complete procedure.

Proceed to Stage Three when you have mastered Stage Two.

Stage Three

Again, completely read through this stage before starting the actual practice.

Step A:

With the sterile glove on the left hand, pick up the right glove by inserting the left fingers underneath the folded cuff.

Step B:

With your gloved fingers under the cuff, push upward while, at the same time pushing and wiggling the right fingers into the glove. Keep the left thumb up and back to prevent touching the skin of the right hand. Do not allow the gloves to touch the table or your clothes as they are considered unsterile.

Step C:

Now that both gloves are on, unfold the cuffs of both gloves so that they extend above the wrists. You should accomplish the unfolding by touching the outside of the glove. The inside of the gloves are considered unsterile.

AHH . . ! ! SUCCESS ! ! Both gloves are in place without contamination ! !

9

This completes Stage Three.

STOP! Go back to the beginning of Stage Three and proceed with the actual practice of putting on the right glove and unfolding the cuffs. At this time the observer will check the participant on each step using the following checklist. Use the grease pencil to mark your checks on the plastic cover. At the end of the exercise, wipe off the grease marks with the soft cloth.

	YES	NO
1. Was the right glove picked up by inserting the left fingers underneath the cuff of the glove?		
2. Was the left thumb kept up and back while pushing your fingers into the glove?		
3. Were the cuffs of both gloves unfolded without touching the sterile glove to the skin?		

If all items are checked <u>yes</u>, CONGRATULATIONS!

If any item is checked <u>no</u>, repeat the complete procedure.

Proceed to the post test when you have mastered Stage Three.

Post Test

Use the grease pencil to mark your answers on the plastic cover. After successfully completing the post test, wipe off the grease marks with the soft cloth.

1. Place in correct order the procedure for putting on sterile gloves using the open glove technique.

   ___ A. Put the glove on by slipping fingers under the folded cuff.

   ___ B. Open the package.

   ___ C. Put the glove on by picking up the top of the cuff. Using thumb and forefinger only while the remaining fingers are folded into the palm.

   ___ D. Open the inside wrapper to expose the gloves.

2. Repeat the gloving demonstration with the observer using the following check list.

	YES	NO
A. Was the package peeled down from the top?		
B. Was the inner wrapper opened flat, touching only the lower outer corners?		
C. Was the bottom flap folded down using the corners only?		
D. Was the left glove picked up by the fold of the cuff with the thumb and the index finger only?		
E. Was the left glove pulled on, touching only the inside of the glove?		
F. Was the right glove picked up by placing the left gloved fingers under the cuff?		
G. Was the left thumb held up and back?		
H. Were the cuffs of both gloves folded up over the wrists without touching the skin or the inside of the glove with the sterile glove?		

3. Given the opportunity to teach sterile open glove technique, you would:

___ A. Feel very comfortable.

___ B. Feel the need for further instructions.

___ C. Feel uncomfortable.

___ D. Feel very uncomfortable.

___ E. Undecided.

When the Post Test has been successfully completed, then try donning the gloves without looking at the illustrations.

Now that one person has fully completed the checklist and the procedure successfully, reverse roles and return to Stage One.

SCORING KEY FOR POST-TEST

1. The correct order is:

   B, D, C, A

2. If the learning unit was successful, you answered YES to items A - H.

3. No answer is incorrect. However, if the learning unit was successful, your answer was A.

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CAST CHECK ON NEW POST-OPERATIVE PATIENT WITH FRACTURED EXTREMITY

by

Kay Sellery Tompkins

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TITLE:	Cast Check on New Post Operative Patient With Fractured Extremity
AUTHOR:	Kay Sellery Tompkins
INSTITUTION:	Maryvale Hospital, Phoenix, Ariz.
INTENDED STUDENTS:	Nursing (orthopedic)
ESTIMATED WORKING TIME:	20 minutes
MATERIALS NEEDED:	None

FIELD TEST COPY

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INTRODUCTION:

The patient with a fractured extremity with a cast needs to have a complete cast check and proper positioning when he first comes to his room. The nurse who first helps the patient into bed can follow some early guidelines to ensure that the patient is properly cared for immediately when he arrives onto the unit.

It is important to note that this package is concerned for the first observation of the patient. There are some further things that can be done for the patient, but we can go into those in a later package.

So sit back and relax. Learning can be fun as well as instructive!

It is hoped you will increase your observation skills, both visually and physically, by going through this package. At the end you should be able to complete a comprehensive cast check on a patient with a fractured extremity. Some of the areas to be covered will include some definitions of terms, things to look for and the reasons why you are doing the cast check.

It is aimed to be to the point and not in great detail since you have some previous understanding of basic nursing skills, anatomy, and physiology. You should be able to gain some insight into orthopedic nursing that is practical and meaningful to you when taking care of this particular type of patient.

Here is a list of things you will learn about.

1. Define the purpose of a cast.
2. Demonstrate knowledge in elevating extremity on pillow.
3. Determine adequate temperature by feeling fingers and toes of extremity.
4. Determine patient's sensation of toes and fingers.
5. Understand the need to check the cast edges for the pressure areas.
6. Demonstrate the process to determine adequate capillary filling.
7. Describe in the nurse's notes the proper observation of the extremity to include color, circulation, temperature and sensation of the extremity.

That may sound like a lot of material; but if you read on, you will see that it is very practical information that takes little time to do, but is so important to the patient.

Are you ready? Good, let's go ahead!

PRACTICE EXERCISE #1

When a patient fractures an extremity, there is usually the need for cast application. Extremities in casts need careful observation immediately after they are put on. You, as the nurse on the unit, are readily available.

Let us look at the reason why a cast is needed. There are several important reasons why the extremity is placed in a cast:

to <u>immobilize and support</u> the fractured extremity

to <u>protect</u> it during the healing process

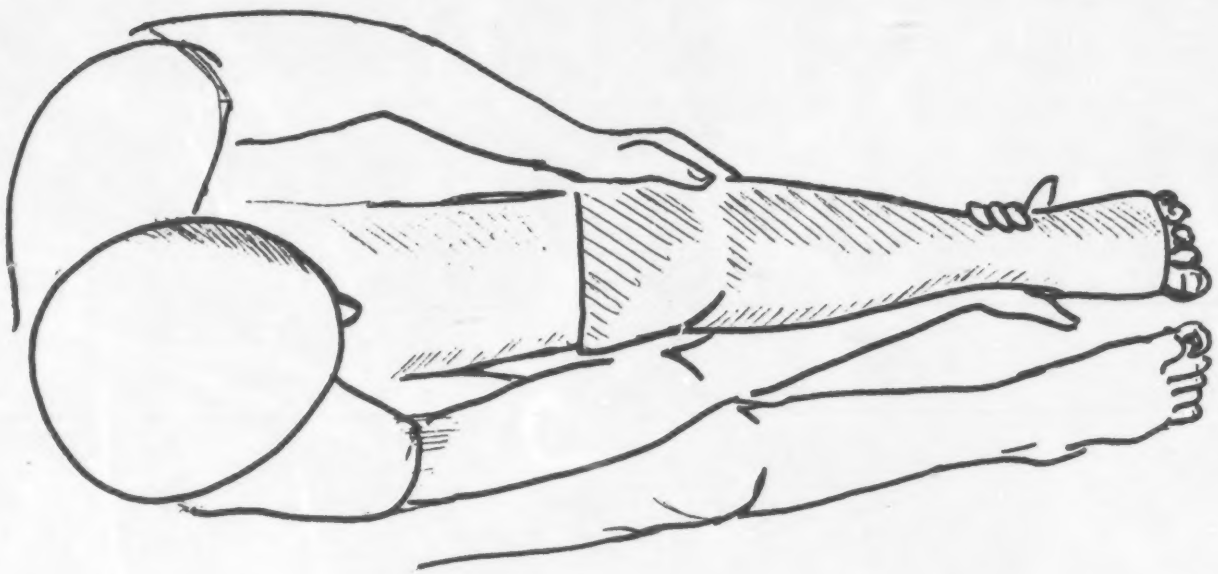
1A. The physician takes great care in putting the cast on. Now can you write down the reasons why he puts the cast in place?

1)

2)

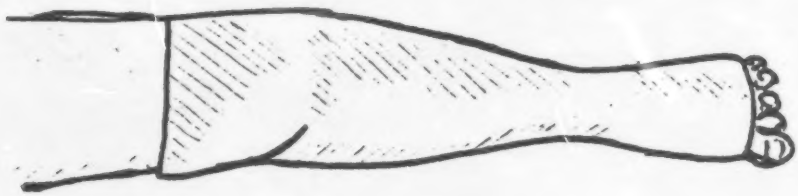
If you answered - support, immobilize, and protect, you are correct. Very good understanding of this principle.

Now, let's look at the picture below and see how you can best lift a cast.



Since we are going to immobilize, support, and protect the fracture, we need to be careful when handling the cast. In lifting a cast we need to follow along these same principles of supporting and protecting. Therefore, when lifting a cast, support should be given to the entire cast, and importantly at the joints of the extremity so that the wet cast will not break or crack. The extremity will also maintain its immobilized state in the cast when the entire cast is supported by the nurse and placed on pillows.

1B. Take a second and put arrows on the diagram below to indicate where you would support a cast when lifting.



If your line went from one end of the actual cast to the other end, you got it correct. If not, please re-read the above paragraph.

PRACTICE EXERCISE #2

Now that we have the patient with a cast, we need to be concerned about several problems. The first is edema. Can you define edema? Well, remember we have to be concerned about swelling inside the cast around the fracture site. So edema is just another term for swelling.

In order to minimize this edema, or swelling, we have a good preventive means. It is elevation. Elevation allows for several things to occur to the patient and the fracture site:

decreases pain in affected extremity
decrease in edema
increase in healing process

We must remember that edema should be minimized because it can help the patient have less pain and pressure on fractured site which in turn speeds up the healing process.

2A. Let us pause a second and review some things. First, can you put in a simple term that best describes edema? _____ Yes, edema is swelling. Very good and you should be able to remember that word.

2B. Think again why we wanted to elevate that extremity. List below those three reasons.

1)
2)
3)

You answered correctly if you listed: 1) decreased pain; 2) decreased edema or swelling; 3) increased healing.

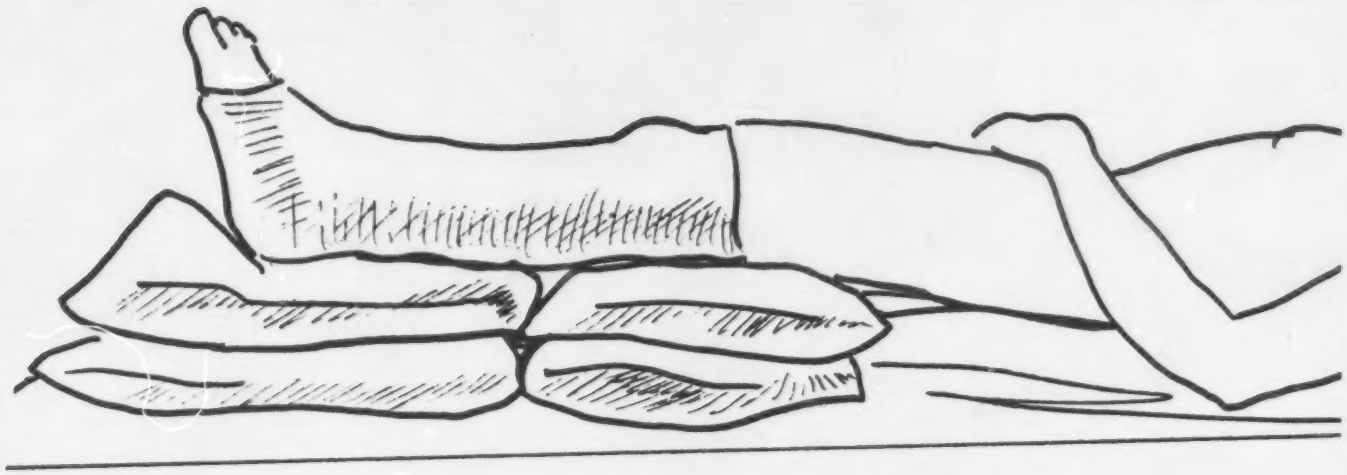
Now that we understand why we want to elevate, how we lift the cast, we can focus our thoughts as to where we place the pillow to obtain this position.

Go back, if you will, to that picture of the leg in a cast. Remember we said we wanted to support the entire cast when we lifted it. We want to do the same thing when we place it on pillows. So we must have pillows the entire length of the cast. The higher the extremity is above the heart the better for the patient's comfort. Usually two pillows will be enough to get the extremity above the heart.

If you remember your principle for lifting the cast, you should be able to draw pillows under the cast to indicated where the pillows should be placed.

2C. Draw a rough diagram showing where pillows should be placed to support a leg cast. You may review the diagram for lifting the cast to get ideas on the need for support.

Your diagram of the leg cast supported by pillows should look something like this. Note that two layers of pillows raise the extremity above the heart.



PRACTICE EXERCISE #3

The circulation to the extremity is essential to adequately heal the fracture. One good check to feel for adequate circulation is to feel the toes or fingers of the extremity. They should be warm to the touch. You can compare fingers and toes of the other extremity to see how different they may be.

There are some common symptoms that occur when casts are on.. We have already mentioned edema. Other signs of circulation impairment are:

change in temperature
numbness
tingling
discoloration
inability to move extremity

Just by touching the toes or fingers we can see if any of these problems are present. The patient can tell you if it's numb or tingles. You can feel the change in temperature, or see the discoloration in the extremity. Remember to feel and look and think when examining the extremity in a cast. These are the most helpful tools you have, and they are always with you.

3. Try to list three of the five common symptoms that can occur when you have a cast on a patient.

1)
2)
3)

If you said 3 out of the 5: change in temperature, numbness, tingling, discoloration or inability to move extremity, you are really doing well. We are going to be concerned with some other tests you can do right at the bedside to help in your cast check.

So read on . . . .

PRACTICE EXERCISE #4

We have looked at the extremity for temperature, color, and now we are concerned with sensation. The patient who can move his fingers and toes well and feels your touch signifies to you that he has sensation. An inability to move fingers and toes is probably a sign he has decreased circulation. Ask the patient how his toes and fingers feel when you touch them.

4. Now that we have made the patient move his toes and fingers back and forth, what are we looking for?

Remember, a decrease in sensation could lead to further complications so we want to check it out early in our care and observation of the patient.

PRACTICE EXERCISE #5

Although the pain from the fracture may be present, we need not lose sight of the added complaint that comes from the cast itself. Pressure on the skin will be just as hazardous as edema around the fracture site. So let's not forget to look at the cast itself.

Here are some of the things to look for when observing the cast:

loose ends that may scratch the patient

loose plaster that may cause itching

a cast edge pushing into the side of the foot or fingers causing the circulation to be cut off.

The easiest thing to remember is that the toes and fingers must be able to move freely in the cast. Ask the patient to move his toes and fingers.

5. When you look at a cast be concerned about the following:

   1)

   2)

   3)

Your correct answer included: loose ends, loose plaster, and a cast edge that pushes into the foot or fingers.

PRACTICE EXERCISE #6

Let us review briefly our purpose in looking at the extremity in a cast. We have been concerned with the support and immobilization of the fracture, as well as protecting it. We need to check for sensation, the presence of edema, the temperature and the color.

The final concern which will be inclusive to our check is the test for capillary filling. This is simple, but vital to see if adequate circulation is present. Capillary filling is the ability of the capillary to refill once it is pinched off and released. The test is simple and easy to do.

Take your own fingernail and pinch it and release it. You will see that it turned white while you had it pinched, but then it turned pink again when you released it. This same principle applies to the patient with a cast. Just pinch and release! You should note the pink color return to the nailbed.

We have done a complete cast check by touching and looking. We have looked and felt for temperature, color, sensation, and now circulation.

6A. Can you define simply what capillary filling is?

6B. What is that simple method we use to check for capillary filling?

If you did not feel you understood the term or the test for capillary filling, please feel free to review the above paragraphs. Or even better, read it over and try the test on yourself. It will be easier to remember!

The correct answer to 6A is that capillary filling is the capillary's ability to refill after it is pinched off and released.

Your answer to 6B should be to pinch and release your own fingernail, noting that it turns white when pinched, pink when released.

PRACTICE EXERCISE #7

The main concern we as nurses have is documentation in nurses notes. They must be accurate, concise, and pertinent to the care of the patient. It is essential in the immediate post-op period to really observe the extremity because this is the base line for examinations that are carried out by other nurses.

Can you remember what we are concerned with? Just stop and think! Take your own fingers and feel. See them; they should have good color, sensation, temperature and circulation. This is also essential when you have a fracture with a cast.

These four things must be described in the nurses' notes. If they are described well, then the time you spent doing the checks will insure proper care of the patient.

7. What are you looking for in your examination of the patient, and what things must you include in your documentation?

Answer: Color, temperature, sensation and circulation.

If you feel you are ready to take the post-test, go ahead. It should prove to be a good review for you.

Try to look at your own fingers and imagine what you see if it were in a cast.

The answers to the test are located on the page following the test.

On the paper following the post-test answers is another questionnaire. Please feel free to fill it out.

POST-TEST

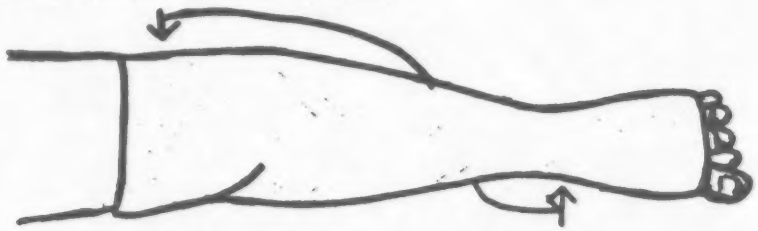
1. Define the purpose of a cast.
2. Demonstrate by using arrows where you would pick up cast to elevate on pillows. Define edema.

3. List 3 common symptoms that casts can produce.
4. What does moving the patient's fingers and toes in the cast indicate to the examiner?
5. When you are checking cast edges, what are you looking for?
6. Define capillary filling. How do you check for capillary filling when patient has a cast on extremity?
7. What four major observations are you concerned about when documenting in nurses notes?

POST-TEST KEY

1. A cast is used to immobilize and support the fractured extremity and to protect during healing process.

2. a. Your picture should look like this:



b. Edema is swelling.

3. Change in temperature

   Numbness

   Tingling (Three out of the five)

   Discoloration

   Inability to move extremity.

4. Sensation

5. Loose ends

   Loose plaster

   Too tight on toes or fingers

6. a. Ability of nailbed to return to pink color after being pinched.

   b. Pinch and release

7. Color, temperature, sensation, circulation

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